

BMHA Newsletter



BICYCLE MOBILE HAMS OF AMERICA

Volume 11 Number 2

April 1991

BMHA NET...ON 20

The BMHA HF net has been meeting twice a month since Jan 6th and in that short time has become an important means of communication for bicycle-mobilers.

Mike Nickolaus, WPCW, the net control, will give a full report at the BMHA Forum at the Dayton HamVention on April 28. But in the meantime, consider these highlights: Top number of check-ins is 20 (on Feb 3). Average check-ins is 14. Two members actually checked in while bicycle-mobile -- Elroy Shelley, WB9GIE in Milwaukee and Elliott Kleiman, WA4YDK in Florida. (See Elliott's article elsewhere in this issue.

Frequency — 14.255 KHz
Time — 2330 UTC
Day — 1st and 3rd Sunday
of each month

Members, non-members, anybody who's interested in bicycle-mobiling — you're all welcome to check in and chat about anything that comes to mind.

ABOUT BMHA

Bicycle Mobile Hams of America got its start when a "Stray" in the June '89 issue of QST asked to "get in touch with hams who operate bicycle-mobiles, or in any other human-powered conveyance", signed by Earlley Alley, N4OA.

25 hams responded, filled out questionnaires, and received a summary of the collected info.

Then in April of '90 we had our own BMHA Forum at the Dayton HamVention. We played to a packed house, overflowed the tiny room assigned to us, and added 54 names to our mailing list. (See elsewhere in this issue for details on our program at this year's HamVention.)

Since January our mailing list has grown from 115 to 160, and paid membership has grown from 47 to 79.

EDITOR'S COLUMN

MY KICOSH

When I came out of the cat scan my doctor looked me straight in the eye and said: "I'm going to level with you. You're in big trouble. I've scheduled you for immediate emergency surgery."

So that's my excuse for not getting out this issue of the BMHA Newsletter on time. On March 5th I was operated on for a triple aneurism of the aorta. Five hours on the table.

This set me back 5 weeks before I could get back to the Model 100 and start work on this issue. At my age, 72, recuperation is a slow process.

Why just 4 years ago on this date I was well into my solo bike trek back to Massachusetts for my high school's 50th reunion. Compare that with today, where I've finally worked my way up to 40 minutes a day on the stationary bike. (It'll be another week before they'll let me get out on a regular bike and just pedal around the block.)

Doctors say that my aneurism got started way back 30 or 40 years ago, when I was a smoker. On the plus side, they say that my last 30 years of cycling strengthened my heart so that it was able to withstand the stress of the operation.

DUES NOW \$10 A YEAR

The Board of Directors has decided that it's necessary to raise the BMHA dues to \$10. This won't surprise those who've had a part in running a club. The recent increase in the postage rate, along with the cost of sending how-to-join info (we send a Newsletter) to all those who contact us, has pushed us too close to the red. The next issue will have a treasurer's report.

—N4OA, Editor

ANTENNAS

A Bike-Mobile J-pole Antenna de Al Gritzmacher, AE2T

A number of years ago, I was asked to help provide 2-meter VHF communications for a marathon run from Buffalo, NY to Niagara Falls, Ontario. The usual communications were needed from checkpoints, water-stops, the start and finish lines and with the medical crew; but the organizers also had requested someone to keep track of the first runner. The course was closed to vehicles, although there were "official" vehicles allowed on the course, it was simpler to avoid putting another car on the course while runners were there.

Initially, the idea was to have a Man on a motorcycle ride the course, but no volunteers were found. At that time, the nice headset/mikes that are common now weren't available and to complicate matters, since the run followed the Niagara River along the Canadian side, there were some spots that weren't too solid on a handy-talkie with just a rubber duck.

I volunteered to do the job on my bicycle, but knew that the one-well Heathkit hand-held I owned then would be nearly useless if I relied solely on its rubber duck antenna. An antenna with some gain was going to be needed as well as any height that could be achieved.

My crude, but effective answer was a bicycle-mounted J-pole antenna.

Most of you are probably familiar with the J-pole. I've seen several versions in magazine articles over the years, but most people think of it as an antenna for fixed-station use.

I had been experimenting with a J-pole design that I had seen in the *ARRL Antenna Handbook*, so I realized it had some desirable characteristics for my bike-mobile operation:

- > It offered gain, since it was a half-wave radiator, it would be about 3db, better than a quarter-wave ground-plane and much better than the rubber "dunny lead".
- > It also required no ground plane to operate, a necessity on the bike.
- > Its construction was simple, with a single "pole" being both the mast and radiating element, so it would be durable enough for the ride.

I built my J-pole using some pieces of aluminum tubing I had rescued from a CB ground-plane antenna. I had a number of pieces, of two different sizes. The larger ones were originally half of the radials, and were roughly $1/2'$ diameter with tapered ends that held the smaller, about $1/8'$, pieces of tubing for the ends of the radials. By coincidence, they also fit snugly inside the other, full-diameter, end of another radial piece. I had three of them, as well as one broken one that I salvaged about two feet from. They made nice portable mast sections.

The actual "J" portion of the antenna was made out of the $3/8"$ pieces tubing. The vertical section was a little over 60" long. The short part of the "J" was $19 1/2"$ and was joined to the long piece $57 1/4"$ from the top. (Dimensions for 146.400.) The spacing between the two sections was about

$1 1/2"$ (not critical) and was constructed with a short piece of the $3/8"$ tubing. The ends were filed so that they were concave and fit nest to the other tubes. A hole was drilled in each of the pieces and a 2" 6-22 machine screw and nut through the short spacer held them all together. A block of plexiglass was drilled and press-fit over the ends of both halves of the "J." This secured the top of the short piece parallel with the main tubing.

Feeding the antenna was the problem though. Impedance matching is no problem, as the bottom $1/4$ -wave of the antenna presents any impedance from nothing at the bottom to infinity at the top. But an unbalanced feedline lapped directly across the feedpoint didn't present a very good match. I tried a 9:1 balun made from a quarter-wave section of coax, and it worked much better, but only if it was secured at a 90 degree angle from the antenna, not a very practical configuration on the bike!

The solution was suggested by a friend after discussing the problem over the air. A "Barooka" match was compact, flexible and easily constructed. If you're not familiar with it, the Barooka is simplicity itself: a quarter-wave (free-space) sleeve slipped over the outside of the co-ax with the bottom end joined to the outer shield on the co-ax, but the top left open. It presents a high impedance to any currents flowing down the outside of the co-ax and effectively decouples the antenna from the outside of the co-ax, while allowing a balanced fit match at the termination point. Just what I needed.

I built one immediately and it did the trick. The SWR was good and no longer affected by the angle of the feedline. In fact, it could now be lapped down the side of the J-pole with no ill effects. The ends of the co-ax were flared and secured to the aluminum tubing with small stainless hose clamps, the type with the screw that tightens them. This allows the feedpoint to be moved up or down the antenna for precise matching.

I wish I had some slick mounting trick to pass on for putting the antenna on the bike, but it was strictly haling wire and string... I took the short tapered piece of the aluminum that I had and fastened it to the rear of the seatstays with more of the stainless hose clamps, a little larger this time. One went around the mast and the other went through the first clamp and around the seatstay. This was repeated lower on the chainstay. These crossed clamps held the mast near vertical at the rear of the bicycle. They didn't do much for the bike's finish though, despite wrapping it with tape!

The antenna and one more section of mast were fitted on top of this rig and held in place with self-tapping nut screws where the pieces telescoped together. Some electrical tape further secured things and held the co-ax in place.

Fortunately, it all held together and other than having to be careful getting on and off the bike, I had an enjoyable and successful ride along the marathon course.

While I only used the J-pole bike-mobile the one time,

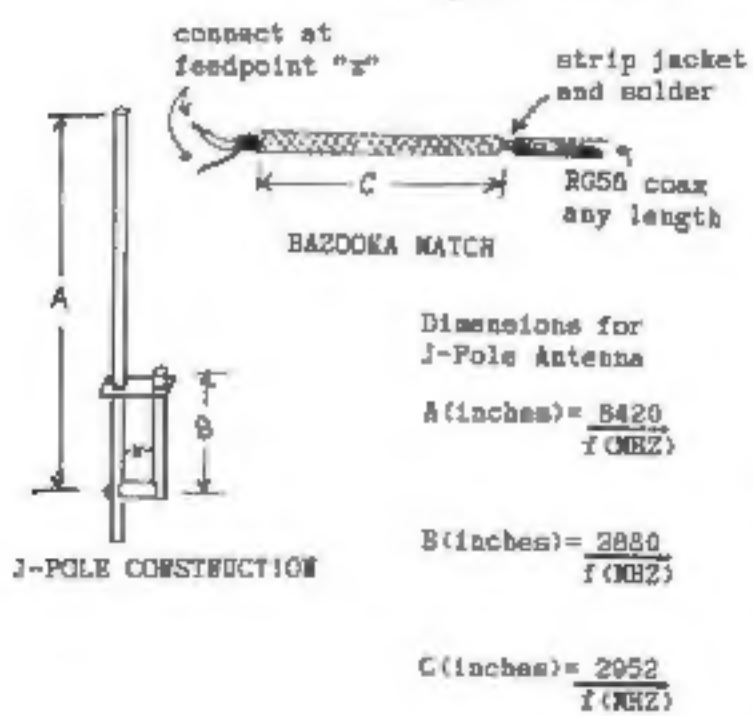
I have put the bike-mobile to good use in many public-service events since, and have always enjoyed combining two terrific hobbies in a way that benefits the public.

I built a couple more of the J-poles, until I exhausted my stock of aluminum. They make a really handy, durable lightweight portable antenna. I have one in my attic for use as a back-up antenna and another that I keep for portable/emergency use. The tapered end radial sections make a good portable mast and can be guyed with light rope and tent stakes.

You can build a J-pole any number of ways. I have seen these made from copper tubing soldered together, 380 ohm twin-lead braided back in form the "J", and cut out of the folded element from TV antennas. Most dimensions are straight out of the handbooks, so I won't reprint them here. The antenna is fairly broadband and is forgiving dimension-wise anyway.

My main piece of advice is combining the bazooka match with the J-pole and to use whatever material you have available and can work with. So next time you see a broken CB antenna by the curb, don't pass up the re-CYCLE-able aluminum you can get from it!

---Al Gritzmacher, AR2T
92 Saxton St
Lockport, NY 14094



LETTERS

Hartley,

I had never owned a bike, until at age 60 I started a bicycle exercise program to replace my walking. The daily commute was 8 miles by land plus a ferry ride. I hung a Henry S-15 on my belt with a speakermike to my collar and a 1/4 wave whip and covered 1000 miles a year, easily talking from Vancouver BC to Olympia WA via a mountaintop repeater east of Everett, WA. Totaled 5124 miles at retirement.

The wierdest antenna, but best, was a 1/4 wave floppy ground plane on my helmet. The "man from mars" comments retired it. But my, to them, unusual approach to commuting continued to draw comments and questions. In the long run I'm sure I inspired some of the regulars to commute by bike and thus "by pass" the long ferry lines! I especially enjoyed kids' comments and carefully explained my operation to them. In spite of PEW weather I would just get up and get going in the morning; in 5 years there were just a few soaking wet rides.

Now that I'm retired the few ferry trips I take are by car -- the ferry riders ask: "Where's the bike?". On the 146.92 repeater I'm still known as the "Whidbey Island Bicycle-mobile" and I still get many questions: "How do you do that?".

73

C. L. Mackie, W7IJY
6130 E. Brighton Bch. Rd.
Clinton, WA 98236

Editor,

Read of your bicycle ham efforts in WUFLORADIO, Jan. '91, p 12. FB,OM.

I ride a Nishiki Safari, the touring bike of the years '74,'75,'76. Then they went out of production -- too expensive to build. By today's standards it's heavy @ 32 lbs. fully-dressed factory stock. But I can slim it down to 24 lbs. quickly by unscrewing fenders, bags, fites, etc.

I'm set up to work very light -- using ATLAS TX/RX modules for RF. My VHF/UHF stuff rides along when I'm in the city. That's been best. Had to do century run 2 yrs ago just to use the 10-80 Atlas. In the spring of '89 I made 47 contacts on 10 FM using a CB conversion MELCO 10 FM. Very light -- catch one if you can.

Antenna screws onto 5/8 connection using SPIDER on rear carrier. Hey. No pictures left. But I don't do this like every weekend. Lately, not riding too much & waist line shows it.

BCED, 73's.

Donn Hornberger, KA6SOM
5614 Minnesota
St. Louis MO 63111

TRAVEL & ADVENTURE

LEAVE YOUR CAR AT HOME

While there are some advantages in taking a car on a vacation I want to discuss here the use of Amtrak as your principal carrier. I've taken Amtrak on many trips.

Naturally you need some kind of transportation at the other end. A car can be rented but I have always taken my bike along. Memories seem to be stronger of areas seen from a bike than out of the window of a car. Most of my vacation trips amount to going to a distant city and exploring it, using the bike to get around while there. Generally my vacations are broken up into one week segments. Inexpensive lodgings can be found, especially using AYM Hostels.

Panniers are not only for camping equipment but can be used as your places of luggage. I usually ride the bike to and from Union Station in Chicago. Arrival at the depot an hour ahead of departure assures time to arrange the bike so it will fit in the box Amtrak provides. At Chicago the bike handling is done in the basement in the baggage room. Your panniers can stay with you in the coach car or sleeper. I always use coach, having no difficulty sleeping in those roomy comfortable seats.

The trip out and the trip back are just as enjoyable as the time out there when you use Amtrak. Viewing the terrain and things you pass from the large windows or dome car is nice. Unlike when you're driving you don't have to keep your eyes on the road. Talking to fellow passengers often is a delight especially in the dining car. You don't have to pay through the ear for a dining car meal as in the old days. The meals are prepared in the kitchen by competent chefs and served with real plates and silverware, not plastic. Tables are covered with white tablecloths.

I have visited Seattle, San Francisco, Los Angeles, Boston, and Washington D.C. this way and have done stopovers in Denver, Grand Junction, CO, and Las Vegas. I just got back from my second trip to Washington D.C. on Amtrak. An automobile in D.C. is a real liability due to the density of traffic and lack of parking. Much more can be seen there by using the bike. It's much quicker than walking or driving. And there's always something solid to lock your bike to.

Since I use the bike as often for getting around in the home area as a car I am secure with traffic. Being competent in traffic, then comfortable with it, is an advantage that comes with regular use of the bike for transportation. You learn to analyze traffic patterns while enroute. After a while it becomes automatic but you have to concentrate when you are in a new area. Sometimes prior research is a help in special cases, such as exiting airports. I always use a rear view mirror on my glasses -- I can't comprehend riding without one. No one drives a motor vehicle without using a rear view mirror. After becoming familiar with the sort I use it only takes 1/10 second to check traffic behind.

Amtrak is still a well kept secret. If most people knew of its benefits you couldn't get a reservation. The slow pace relaxes you and clears your mind from everyday distractions. I love it! ALL ABOARD AMTRAK.

Jerry Peterson, K9NW
202 Fairview
Mt. Prospect, IL 60056

CLUBS & EVENTS

HOW I DID THE TRIPLE

For several years I had heard of the 24-Hour Bicycle Marathon put on by the West Palm Beach Recreation Bicycle Club. The idea was so crazy that it intrigued me. Just a 49-year-old kid, I had only started cycling eight years before, when I lived in Boulder, Colorado. On my first club ride Bartley Alley had showed me how to climb when I was struggling up a canyon road.

At 11 a.m. Saturday, January 27th, the Bates travel trailer entered the Fairgrounds gate, a bicycle being the required pass for entry of rider and trainer (wife Judy). The annual county fair was in progress but we headed straight for the infield of the half-mile oval track, which had been reserved for twenty-four hours by the club. This auto race track is perfect for cycling -- banked at the turns and paved with faultlessly smooth blacktop.

Starting time was 2 p.m. Riders were busy making the final adjustments in the hope of avoiding any mechanical problems during the next 24 hours. One wife-trainer heightened the tension by announcing from her canvas fly-tent that her husband would average 21 mph for 24 hours to beat the 507-mile world record for this sort of thing. The track record was 453 miles made two years earlier. Bob Husky of the host club handed me an odometer. Instructions were to count it on the bike and then make two trips around the track to check it out. And then of course to reset it to zero.

At 2 p.m. the gun sounded and 64 riders were off in a burst of energy. The light drizzle didn't dampen the surge of bright colors. At first it seemed as if the turns at each end were banked for more speed than I had. No problem. The real trick was, upon hearing a blowout, to figure out in the initial mass, whether it was in front of or to the side. For self-preservation the rider with a blowout would raise an arm to avoid the usual pileup.

I had chosen to attack the 24-hour trip by staying in the saddle for 3-hour sessions. At 5:15 with 50 miles completed, I came in for dry jersey, trainer-cooked stew and honey-filled energy bars (recipe available).

The wet-gray evening turned to an even wetter darkness. Track-lit figures became recognizable. The macho-allers came from behind yelling, "Inside" or "On the left!" Then 8 or 10 would fly by, sometimes splitting to whiz through on both sides. I got to know some of the slower ones. One young fellow was there because he had reached the qualifying age of eight the day before. The eleven-old-gal with red raincoat stayed clear by riding along the upper edge of the track. At 10 p.m. I heard someone ask her if she had made 100 miles yet. "Just finished 95, Daddy", was her answer. She rode all night to finish 12th overall with 225 miles.

At 12:30 a.m. I headed for a warm, snappy shower, then an hour's rest in a bunk nicely preheated by trainer.

Between 3 and 5 a.m. there were only 13 silent cyclists sloshing through the continuous wetness. At five, many sleepy cyclists emerged to be greeted by wind instead of rain. It wasn't easy to put a sore rump onto a cold saddle, then roll immediately into an snowing peloton.

Terry Osborne was now in the lead. On one early dawn circuit, Terry's order was, "Hot butter and honey." On the next pass his faithful pit woman jogged along, arms stretched, holding the secret potion in a styrofoam cup. At the point of transfer half the liquid left the cup. Enough must have reached the ironman because he completed 400 miles, his fourth win and a new record for the track.

The youngest rider, the 8-year-old, rode 136 miles. The most senior at 78 did 105. Second place for distance went to a 35-year-old with 369 miles. My goal was 300. When the odometer on my Peugeot said 305.6 I packed it in and took two weeks to recuperate!

John Baine, KC4ECA
5504 Antoinette St
Sarasota, FL 34232



LETTERS

Dear Hartley,

Just thought that this might be of interest to the big gun Qlers!

On January 19, 1991, at 1440 GMT on 28.601 MHz, I had a bike mobile to bike mobile QSO -- between me, VA4YDK, and WB9G12 (Elroy). I was in Hollywood FL and Elroy was in Milwaukee WI. We believe that this is the first HF to HF bicycle mobile QSO.

That was exciting enough, but on January 24 at 1750 GMT on 20 meters I worked G4PEP (England) from my bicycle INSIDE THE GARAGE WITH MY ANTENNA FOLDED IN HALF! Who says you need power? Who says you need a beam up 65 feet?

On January 25 with the same rig, I worked my good friend Evilio, TV513, in Venezuela. After my QSO with him, I tuned down the band and heard the Family Hour DX net. I asked for a relay to the net controller, who then listened for me. He gave me a 4X3 and I gave him a 5x5. His call was VE4NR and his QTH was Queensland, Australia.

After looking at the picture of the rig and antenna configuration that I was using when I worked VE4NR, the only thing I could think to myself was: "Power, who needs it? Amazing, just amazing!"

- 1 bike: Huffy Durasport
- 1 radio: Kenwood TS 130S
- 1 antenna: Hustler mobile
- 1 tuner: Tentec
- 1 power: 12V motorcycle battery
- 1 ground: insulated wire coiled around the frame
- 1 input: 75 Watts
- 1 output: unknown, but not much

Additional notes: The SWR is tuned to 1:1, but may be loading the tuner and not the antenna. I have been known to get RF burns from the bike and the head phones. Battery life when transmitting may be up to 2 hours. The deep cycle operation doesn't do too much for the battery.

Sincerely,

Elliot B. Kleiman, VA4YDK/bicycle mobile
4701 McKinley St.
Hollywood, FL 33021

BKMA NEWSLETTER

EDITOR: Hartley Alley #404

BOARD OF ADVISORS: Russell Dwerakula KB6U,
Len Knapp ED0RC, Mike Nickolaus WP0E, Bob Pulhoj KB6ZJ

We welcome articles, suggestions, announcements, letters, photos, artwork --- anything pertaining to bicycling while operating an amateur radio, or vice versa!

Submitted material will be edited for clarity, and, if necessary, shortened to fit space constraints.

Material should be submitted before Dec. 1, Mar. 1, June 1, or Sept. 1 for inclusion in the ensuing issue.

BKMA NEWSLETTER is the quarterly publication of the Bicycle Mobile Ham of America. Issued in Jan, Apr, July, and Oct.

TELEPHONE: 303-494-0550

BICYCLE MOBILE HAM OF AMERICA (BKMA)
Box 4009, Boulder, Colorado 80306

ANNUAL DUES: \$10



Elliot Kleiman VA4YDK, above, with his antenna folded in half; Elroy Shelley WB9G12, below, on the lakefront at Milwaukee.



ANTENNAS



At the '90 HamVention I had many requests for a "How-To" on the 1/2 wave antenna

that worked so well on my 2,000 mile solo bike ride back to my high school's 50th reunion. Theory tells us that the best antenna in an unsuitable ground plane situation is a 1/2 wave. And a bicycle is a lousy ground plane. Larsen claims a gain of 2.4 dB for this setup. I believe it. Phone me 303 494 6550 if you have problems putting it together.

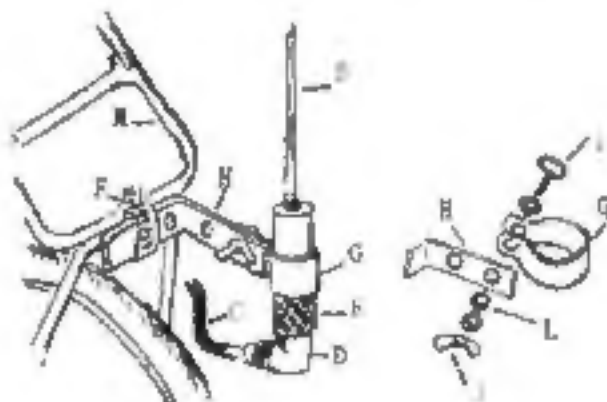
PARTS NEEDED

A	Larsen 1/2 wave antenna, PHV-150...	\$30.00
B	5/8 whip, for 2 meters.....	5.50
C	6' cable RG58, Radio Shack 278-975...	5.30
D	right angle adaptor, K359 278-199...	2.50
E	UG88 Male BNC connector 278-103...	3.00
F	hose clamp, stainless (to fit around corner brace and YOUR rear carrier)...	.60
G	pipe clamp (loom clip) 1" vinyl-coated	1.20
H	corner brace, 3".....	.30
I	thumb screw, 1/4"-20.....	.50
J	wing nut.....	.30
K	3 washers.....	.08
L	lock washer, split.....	.02
M	rear carrier.....	N/A
TOTAL COST, PARTS.....		\$50.30

ASSEMBLY

1. Detach aircraft cable element from the base of the PHV-150. (Save it for backpacking trips)
2. Using a file, cut the 5/8 whip antenna down to 1/2 whip size. (Mine is exactly 40 1/2".)
3. Place the whip in position on the antenna base and attach firmly with the existing set screws.
4. Using a vice, bend the corner brace so that its angle is opened to about 135 degrees, rather than its original 90 degrees. (This allows the antenna to pivot forward and clear of the carrier, when bicycle is stored. See drawing at top of page.)
5. Using the hose clamp, attach the corner brace to the rear carrier, as shown in the drawing. If necessary, and to improve the stability, place a piece of inner tube between the two parts. Make this a snug, stable fit.
6. Place the antenna base in the pipe clamp. To insure a snug fit wrap a piece of inner tube around the base.
7. Assemble the parts as shown in the drawing.

8. Screw the right angle adaptor into the antenna base.
9. Attach the coax cable as shown and cut off the connector that's on the other end.
10. Using standard soldering technique, attach the male BNC connector to the end of the coax.
11. Connect up your HT and go on the air!



COMMENTS

When I'm bicycle-mobile I wear the HT on my leather belt (on my right hip) and I attach a speaker-mike to a "collar" that I wear around my neck. The collar is made of 1/2" webbing, about 28" long. You can sew the ends together or use velcro. Hooked to this collar the speaker mike rests just forward of my shoulder---close to my ear for hearing and close to my mouth for speaking. The mike takes only one hand to operate. And if an emergency requires that you put both hands on the handlebars, the mike won't fall when you let go of it.


At first you might find that the 6 foot coax cable is too long, but that extra length comes in handy when you stop and get off the bike when you're on the air. I take care of the slack by judicious use of a bungee or by stuffing the excess in a zippered pocket of a pannier bag.

To make the antenna more visible-- and to thus serve as a safety flag--- cover the whip with plastic tubing or shrink tubing. For high visibility use white or safety-color tubing. I top off my whip with a couple of 12" pieces of yellow or orange surveyors tape, tied to the top of the whip with fishing line.

----Hartley Alley, W4QA
Box 4009
Boulder, CO 80306

QSL CORNER

In this space we feature QSL cards that have a bicycle-mobile photo or motif. Send yours in. We'll run it.



104 DEER TRAIL • PRESCOTT, AZ 86301

QSO WITH	MHz	DATE & TIME
LOCATION	RST	MODE

We received this card from Bill Cooper, KB7JEY, of Prescott, AZ. He writes:

Dear Hartley,

I was reading Steven Roberts (NARVE) CAA on Genie today to check up on his progress and he said you headed up a bicycle ham club. If I could contribute by being a member I would be happy to join up. It would be interesting to share systems info to use as a cycling ham.

Last spring I toured from Prescott, Arizona to Jackson, Mississippi -- about 1500 miles. I carried a 2M 100W HT and a 10W Radio Shack transceiver. The 10W was powered by a 10AH battery that was charged with a solar cell carried on the rear rack. The antenna used mostly was a tuned coax slingshotted into the nearest tree. Several interesting contacts were made in the first part of the trip. The band started closing down during the second half.

I am planning a trip this spring from here in Arizona to Pennsylvania and had considered using a packet rig with my 2M HT. Not having had any experience with packet it would be great to hear from someone who has used packet on an extended bike trip.

Thanks,
Regards,
Bill Cooper, KB7JEY
104 Deer Trail
Prescott, Arizona 86301

(Yes, anybody with packet experience from a bike should write to Bill, but also send the info to the BNHA Newsletter, so that we can share it with all our readers. ...Editor)

MEMBERSHIP APPLICATION

BICYCLE MOBILE HAMS OF AMERICA (BNHA)

Please complete and return to:

BNHA

PO Box 4009

Boulder, CO 80308

(check one) new member ☐ renewal ☐

Date _____

Name _____ Call _____ License Class _____

Address _____

City, State _____ Zip _____

Regular Membership: \$10 per year

Additional contributions will help defray cost of preparing and mailing the quarterly BNHA Newsletter.

Enclosed is my check for \$ _____

(Make checks payable to BNHA, Bicycle Mobile Hams of America)

CORRECTIONS

The chart that accompanied the excellent article on HEADSHOTS & THE LAW (Jan 91 issue) by Barney Scholl K3LA had a few omissions. With his apologies, Barney sends us the corrected chart, which appears below.

State	Number of Headshots Allowed		Section
	1 Headshots	2 Headshots	
Alabama	yes	yes	
Alaska	no	no	
Arizona	yes	yes	
Arkansas	yes	yes	
California	yes	no	37400
Colorado	no	no	384 41-2-212
Connecticut	yes	yes	
Delaware	yes	no	31 Del C 4124b
D.C.	yes	yes	
Florida	no	no	Florida stat 219.191
Georgia	no	no	OGA 32-5-228
Hawaii	yes	yes	
Idaho	yes	yes	
Illinois	no	no	121.000 12-210(a)
Indiana	yes	yes	
Iowa	yes	yes	
Kansas	yes	yes	
Kentucky	yes	yes	
Louisiana	yes	yes	
Maine	yes	yes	
Maryland	yes	no	31-1218(a)
Massachusetts	yes	yes	
Michigan	yes	yes	
Minnesota	no	no	142.472(2)
Mississippi	yes	yes	
Missouri	yes	yes	
Montana	yes	yes	
Nebraska	yes	yes	
Nevada	yes	yes	
New Hampshire	yes	yes	
New Jersey	yes	yes	
New Mexico	yes	yes	
New York	yes	yes	
North Carolina	yes	yes	
North Dakota	yes	yes	
Ohio	yes	no	ORC 151803
Oklahoma	yes	yes	
Oregon	yes	yes	
Pennsylvania	no	no	72 Pa.C.S. 2314
Rhode Island	no	no	87 Gen Laws 2313-51
South Carolina	yes	yes	
South Dakota	yes	yes	
Tennessee	yes	yes	
Texas	yes	yes	
Utah	yes	yes	
Vermont	yes	yes	
Virginia	yes	no	7a Code 482-1014
Washington	no	no	RCW 311.021
West Virginia	yes	yes	
Wisconsin	yes	yes	
Wyoming	yes	yes	

BMHA NEWSLETTER

Bicycle Mobile Hams of America
PO Box 4009
Boulder, CO 80306

Address Correction Requested

First Class Mail

UPCOMING IN BMHA

1991 DAYTON CONVENTION, April 26-28

Our BMHA Forum is set for Sunday the 28th, 9:30 am to 11:15. We'll be in room 2, which seats four times as many as last year's room.

Maybe you saw in the April issues of QST and Worldradio the short articles about the BMHA Forum. With the help of this publicity we should fill the room.

In the absence of Bartley Alley, NAOA (see page 1) the Forum will be co-chaired by Mike Nickolaus, WFOE, and Bob Pulhuj, KB2ZJ. Mike, our net control, will report on the BMHA 20 meter net; Bob will talk about Home-Brewing and show us the recumbent bike that he made from scratch. A large block of time has been set aside for comments and suggestions from the floor.

Right after the Forum we'll bus as a group to a local restaurant for lunch, an eyeball, and of course some elbow bending.

CONTACT

This is a new department in the BMHA NewsLetter, the object being to establish a clearing house where our readers can exchange information. Send your request in - we'll run it.

"I'd like to contact any bike-ham who has worked packet while on the road."

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